with regard to mortality no difference was observed in both the groups (6.55% vs 5.44%, $p = 0.23$). Angiographic profile showed lower preponderance of single vessel disease (SVD) in MetS group vis-à-vis without MetS group (29.52% vs 55.48%, $p = 0.001$). However, presence of double vessel disease (DVD), triple vessel disease (TVD), and left main (LMCA) (42.28% vs 23.69%, 22.87% vs 9.82%, 12.38% vs 4.04%, $p = 0.001$) were more common in MetS group than without MetS group. More complex coronary lesion (tubular 42.59% vs 32.76% and diffuse 25.29% vs 15.79%, $p = 0.01$) were common in MetS group than in patients without MetS group when compared to simple coronary lesion (discrete 32.12% vs 51.45%, $p = 0.01$), respectively.

Conclusion: Our study has identified the high prevalence of MetS among patients with ACS in North Indian population. Also there is trend of more advanced vascular damage (depending on number of vessel and type of lesion involvement) in patients with MetS than those without MetS. To the best our knowledge this is first study from North India documenting the angiographic profile of patients with metabolic syndrome and ACS.

Comparison of clinical and angiographic profiles of patients with acute myocardial infarction of the age above and below 40 years

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Introduction: Coronary artery disease (CAD) is becoming a major cause of morbidity and mortality burden in the developing world. Indians have been associated with a more severe form of CAD that has its onset at a younger age group with a male predominance. The purpose of this study was to investigate and compare the clinical characteristics and coronary angiographic features of patients with acute myocardial infarction (AMI) of the age above and below 40 years.

Methods: We collected data of 206 consecutive patients with STEMI from January 2013 to December 2013 at our institute (a tertiary care center). The clinical history revealed information about age, gender, risk factors, modes of presentation, and duration of symptoms. The regions of infarction and rhythm disturbances were also documented. The subjects were evaluated for conventional risk factors, i.e. smoking, diabetes mellitus, systemic hypertension, and family history of premature CAD. Selective coronary angiography in multiple views was performed by standard technique to define both the extent and severity of disease.

Results: Mean patient age was 49.39 ± 10.45 years. All the patients in less than 40 years age group presented with chest pain. In more than 40 years age group, only 91% presented with chest pain remaining with dyspnea and fatigue ($p < 0.021$). Incidence of AMI in less than 40 years age group was 29% ($p < 0.001$).

Diabetes was present in 44% ($p < 0.001$) and hypertension was present in 35% ($p < 0.001$) of study group; both of them were common in more than 40 years age group. Incidence of dyslipidemia was 36% ($p < 0.095$) common in less than 40 years age group. Smoking, alcohol, and family history was common in less than 40 years age group ($p < 0.001$).

AWMI was the most common MI with 51%. IWMI incidence was 44%. Most of the patients had ejection fraction between 40 and 50%. SVD was most common with 55%. Recanalisation rate of coronaries was 9% ($p < 0.001$) and thrombus in coronaries seen in 23%; both of them were common in less than 40 years age group. Total occlusion of coronaries seen in 12%. Pharmacoinvasive angioplasty was the most common intervention done in 21%.

Conclusion: Clinical and angiographic profile was different in age above and below 40 years. Younger patients had lower prevalence of diabetes and hypertension, smoking, and family history of premature CAD was more common than older patients.

Prognostic value of NT-Pro-BNP in prediction of left ventricular systolic function and outcome of patients of acute coronary syndrome

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Background: Role of NT-Pro-BNP in the diagnosis and differential diagnosis of left ventricular failure is now established. The objective of the present study was to investigate the ability of the NT-Pro-BNP level to predict LV systolic function, in-hospital mortality, and post-discharge short term prognosis, in patients of acute coronary syndrome.

Methods: Patients with acute coronary syndrome ($n = 216$) presenting with typical chest pain and labelled diagnosis of STEMI or NSTEMI were included in the study. Measurement of NT-Pro-BNP and Echo parameters were done on admission and at 72 h as well. The patients were followed up in the OPD for a mean period of 5.4 months (2.3–8.7 months) after hospital-stay of mean 8.3 ± 1.2 days. The follow-up was terminated on reaching the primary end point which were death, fatal or non-fatal MI (or recurrent MI in patients with STEMI) or revascularization, or admission for HF.

Results: Out of 216 patients enrolled in the study 104 (48%) had STEMI and 112 (51.9%) had NSTEMI. Amongst the STEMI patients 92 (88.4%) received thrombolysis and the rest did not receive thrombolysis either due to late presentation or contraindication(s). Mean time-window of thrombolysis was 6.7 ± 1.3 h (3.2–11.7 h). STEMI patients had Killip class I 73 (70.1%), class II 23 (22.1%), class III 6 (5.7%), and class IV 2 (1.9%). The patients in both STEMI and NSTEMI groups were divided according to the NT-Pro-BNP values. The patients in each category were divided into two groups, one in the high tertile and the other consisting of low tertiles. The characteristics and follow up outcomes were compared in the two groups, high NT-Pro-BNP group and low NT-Pro-BNP group. STEMI patients having high NT-Pro-BNP level tended to be on higher Killip class than others. Mean LVEF measured after 3 days were significantly lower in patients of both forms of ACS having higher NT-Pro-BNP values ($p < 0.05$). In-hospital mortality was significantly higher in STEMI patients having higher NT-pro-BNP values (5.5% vs 4.4%, $p < 0.05$) whereas this trend was not evident in NSTEMI patients (4.5% vs 4.4%, p = NS). During follow-up, recurrent MI, admission due to heart failure and death out of hospital due to any cause were significantly higher in both groups of patients having high NT-Pro-BNP values. Patients with high NT-Pro-BNP values had more multivessel CAD (2 or 3-vessel involvement) compared to those with low NT-Pro-BNP level (80% vs 65.2%, $p < 0.05$), whereas, patients with low NT-Pro-BNP values had more single vessel disease (31.9% vs 20%, $p < 0.005$). Patients having high values had more chance of having LAD involvements (56% vs 44.7%, $p < 0.05$) compared to others with lower values.

Conclusion: High NT-Pro-BNP level is associated with significantly lower LVEF and poorer outcome in patients of both forms of ACS ($p < 0.05$) but STEMI group correlated better than the NSTEMI group. So NT-Pro-BNP level (either on admission or at 72 h) is important in prediction of LV systolic function and outcome of patients of acute coronary syndrome. Single estimation of NT-Pro-BNP level on admission alone is sufficient for this purpose.